

What is Claimed Is:

1. A circuit breaker comprising:
separable contacts;
a trip mechanism including a member responsive to at least one selected condition of current flowing through said separable contacts; and
an operating mechanism for opening and closing said separable contacts, said operating mechanism including a closed position, a tripped open position, a lock, a first link and a second link having a base and a pair of legs, said lock pivotally mounted to and substantially between the legs of said second link, said first link pivotally mounted to said second link, said first link and said second link having a first state in said closed position and a second state in said tripped open position, said lock maintaining said first state in said closed position and responding to the member of said trip mechanism to release said first link and said second link to said second state in said tripped open position.
2. The circuit breaker of Claim 1 wherein said operating mechanism further includes a pivot, a movable contact arm pivotally mounted to said pivot and carrying one of said separable contacts, and a spring member disposed between the legs of said second link, said spring member having a first end and a second end, the first end of said spring member engaging said pivot, the second end of said spring member engaging said lock.
3. The circuit breaker of Claim 1 wherein each of the legs of said second link includes a cutout portion and a pivot portion; wherein said lock includes a pair of ears, with said lock passing through the cutout portions of the legs of said second link before each one of said ears pivotally engages a corresponding one of the pivot portions of the legs of said second link.
4. The circuit breaker of Claim 3 wherein said operating mechanism further includes a pivot, a movable contact arm pivotally mounted to said pivot and carrying one of said separable contacts, and a spring member disposed between the legs of said second link, said spring member having a first end and a second end, the first end of said spring member engaging said pivot, the second end of said spring member engaging said lock.

5. The circuit breaker of Claim 4 wherein the first end of said spring member includes a pair of legs; wherein each of the legs of said second link includes an opening, with each of the legs of the first end of said spring member passing through a corresponding one of openings of the legs of said second link and engaging said pivot.

6. The circuit breaker of Claim 5 wherein said spring member is formed from a wire including a first L-shaped portion forming a first one of the legs of the first end of said spring member, a U-shaped portion forming the second end of said spring member, and a second L-shaped portion forming a second one of the legs of the first end of said spring member, with each of the first and second L-shaped portions having a leg portion and a foot portion, with each of the foot portions passing through a corresponding one of the openings of the legs of said second link, with said U-shaped portion having a base and a pair of legs, the base of said U-shaped portion engaging said lock, and with each of the legs of said U-shaped portion being coextensive with and forming a bend portion with a corresponding one of the first one and the second one of the legs of the first end of said spring member, said bend portions engaging said pivot.

7. The circuit breaker of Claim 4 wherein said lock includes a protrusion; and wherein the second end of said spring member engages said lock at about the protrusion thereof, in order to hold said lock pivotally in place between the legs of said second link.

8. The circuit breaker of Claim 7 wherein the legs of said second link form a stop; and wherein said lock includes a surface opposite the protrusion thereof, with the surface of said lock engaging said stop.

9. The circuit breaker of Claim 1 wherein said lock further includes a latch surface; and wherein said first link includes a mating surface, which engages said latch surface, in order to maintain the first state of said links in the closed position of said operating mechanism.

10. The circuit breaker of Claim 9 wherein said lock further includes a trip surface; wherein each of the legs of said second link includes a pivot portion; wherein said lock includes a pair of ears, with each one of said ears pivotally engaging a corresponding one of the pivot portions of the legs of said second link; and

wherein the member of said trip mechanism engages said trip surface to pivot said lock about the pivot portions of the legs of said second link, in order to disengage said latch surface from said mating surface and to release said first link and said second link to said second state in said tripped open position.

11. The circuit breaker of Claim 1 wherein said operating mechanism further includes an operating handle for operating said operating mechanism, said operating handle having a pair of arms on opposite sides of said second link.

12. The circuit breaker of Claim 11 wherein said operating mechanism further includes a pivot and a pair of extension springs, with each of said extension springs extending on opposite sides of said second link between a corresponding one of said arms and said pivot.

13. The circuit breaker of Claim 1 wherein said trip mechanism further includes an electromagnetic device having a coil electrically connected in series with said separable contacts.

14. The circuit breaker of Claim 13 wherein said member of said trip mechanism includes a pivotable armature mechanism; and wherein said trip mechanism further includes a pole piece and said pivotable armature mechanism, said pivotable armature mechanism having a first portion, which is attracted toward said pole piece responsive to said selected conditions, and a second portion, which pivots and engages said lock, in order to release said first link and said second link to said second state in said tripped open position.

15. The circuit breaker of Claim 13 wherein said at least one selected condition of current is a plurality of selected conditions of current; wherein said member of said trip mechanism includes a pivotable catch; and wherein said trip mechanism further includes a pole piece and a pivotable armature, said pivotable armature having a first portion, which is attracted toward said pole piece responsive to said selected conditions, and a second portion, which pivots said pivotable catch, said pivotable catch responsively pivoting and engaging said lock, in order to release said first link and said second link to said second state in said tripped open position.

16. The circuit breaker of Claim 1 wherein the base and the legs of said second link form a U-shape.

17. The circuit breaker of Claim 1 wherein said operating mechanism further includes a reset lever pivotally mounted to said case.

18. The circuit breaker of Claim 17 wherein said operating mechanism further includes an operating handle for operating said operating mechanism, said operating handle having an arm, a tripped open position and an open position; and wherein said reset lever includes a first arm and a second arm, the arm of said operating handle engaging the first arm of said reset lever as said operating handle moves from the tripped open position to the open position thereof, said reset lever responsively pivoting and moving said second arm to engage and pivot said first link, in order to move said first and second links from the second state to the first state thereof.

19. The circuit breaker of Claim 17 wherein said reset lever is biased to pivot the first arm of said reset lever toward the arm of said operating handle in the tripped open position thereof.

20. The circuit breaker of Claim 1 wherein said circuit breaker is a telecommunication circuit breaker.